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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,043	09/15/2006	Werner-Holger Heine	2003P13456WOUS	7261

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SIEMENS CORPORATION
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EXAMINER	
EASTMAN, AARON ROBERT	
ART UNIT	PAPER NUMBER
3745	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,043	HEINE ET AL.	
	Examiner	Art Unit	
	Aaron R. Eastman	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/15/2006 & 10/26/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 8, 9 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 6,152,697 (Konishi et al. hereinafter).

3. In re claim 8 Konishi et al. disclose a turbine rotor shaft, comprising:

a middle region (2) having a middle region material and a longitudinal axis and having a first end face oriented perpendicular to the longitudinal axis and arranged at an a first end of the middle region (2) and a second end face arranged at a second end of the middle region (2) opposite the first end face;

a first outer region (1) having a first material and arranged coaxially with the longitudinal axis abutting the first end face of the middle region (2); and

a second outer region (3) having a second material and arranged coaxially with the longitudinal axis and abutting the second end face of the middle region wherein the middle region material has a higher heat resistance than the first and second materials (col. 3 lines 24-52).

4. In re claim 9 Konishi et al. disclose the turbine shaft as claimed in claim 8, wherein the first and second outer regions are welded to the middle region (col. 3 lines 24-52).

5. In re claim 14 Konishi et al. disclose a method for manufacturing a turbine shaft, comprising:

producing a middle region (2) from a heat-resistant material;

producing a first outer region (1) from a material that is less heat-resistant than the middle region (2) material;

producing a second outer region (3) from a material that is less heat-resistant than the middle region material (2); and

welding the first and second outer regions opposite ends of the middle region (col. 3 lines 24-52).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konishi et al.

8. In re claims 10-13 Konishi et al. teaches the turbine shaft as claimed in claim 9, wherein the middle region material is a forging steel having 9 to 12% by weight of chromium (in re claim 10), wherein the first and second outer materials are different (in re claim 11), the turbine shaft as claimed in claim 11 (in re claim 12) and the turbine shaft as claimed in claim 8 (in re claim 13). Konishi et al. do not teach wherein the first and second materials are steels having 1 to 2% by weight of chromium (in re claim 10),

wherein the middle region is exposed to steam at 550°C and 250 bar (in re claim 12) or wherein the middle region material is nickel based (in re claim 13).

Since Applicant has not disclosed that having the first and second materials are steels having 1 to 2% by weight of chromium, the middle region is exposed to steam at 550°C and 250 bar or the middle region material is nickel based solves any stated problem or is for any particular purpose above the fact that these limitations reduce the amount of chromium needed or simply state the conditions of the working environment and it appears that the apparatus of Konishi et al. would perform equally well with the alloys and working conditions as claimed by Applicants, it would have been an obvious matter of design choice to modify the apparatus of Konishi et al. by utilizing the alloys and working conditions as claimed for the purpose of reducing the amount of chromium.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6,358,004 (Shiga et al. hereinafter) in view of Konishi et al.

10. In re claim 15 Shiga et al. disclose a steam turbine comprising:

a turbine shaft arranged coaxial with a rotational axis of the turbine wherein the shaft has a middle region having a middle region material and first and second end faces oriented perpendicular to the longitudinal axis of the shaft arranged at opposite ends of the middle region (see the right side of Fig. 8or Fig. 9);

a plurality of blades attached to the first outer and second outer regions of the turbine shaft;

an inner casing (18) surrounding the turbine shaft;

a plurality of vanes attached to an inner surface of the inner casing; and

an outer casing (19) that surrounds the inner casing (Claim 1).

11. Shiga et al. do not disclose a steam turbine, comprising:

a turbine shaft arranged coaxial with a rotational axis of the turbine wherein the shaft has a middle region having a middle region material and first and second end faces oriented perpendicular to the longitudinal axis of the shaft arranged at opposite ends of the middle region,

a first outer region having a first material and arranged coaxially with the longitudinal axis abutting the first end face of the middle region, and

a second outer region having a second material and arranged coaxially with the longitudinal axis and abutting the second end face of the middle region wherein the middle region material has a higher heat resistance than the first and second materials.

12. Konishi et al. disclose a steam turbine, comprising:

a turbine shaft arranged coaxial with a rotational axis of the turbine wherein the shaft has a middle region having a middle region material and first and second end faces oriented perpendicular to the longitudinal axis of the shaft arranged at opposite ends of the middle region,

a first outer region having a first material and arranged coaxially with the longitudinal axis abutting the first end face of the middle region, and

a second outer region having a second material and arranged coaxially with the longitudinal axis and abutting the second end face of the middle region wherein

the middle region material has a higher heat resistance than the first and second materials as discussed above.

13. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Shiga et al. by using a turbine shaft arranged coaxial with a rotational axis of the turbine wherein the shaft has a middle region having a middle region material and first and second end faces oriented perpendicular to the longitudinal axis of the shaft arranged at opposite ends of the middle region, a first outer region having a first material and arranged coaxially with the longitudinal axis abutting the first end face of the middle region, and a second outer region having a second material and arranged coaxially with the longitudinal axis and abutting the second end face of the middle region wherein the middle region material has a higher heat resistance than the first and second materials as taught in Konishi et al. for the purposes of Increasing heat resistance while decreasing the amount of Chromium used.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP's 3876335, 4962586, 6129514, 6499946, 6767649, 6962483, 6971850, 7065872 and 7168916 disclose multiple alloy rotors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron R. Eastman whose telephone number is (571)270-3132. The examiner can normally be reached on Mon-Thu 9:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron R. Eastman/
Examiner, Art Unit 3745

/Edward K. Look/
Supervisory Patent Examiner, Art Unit 3745